172 | Vaginal Discharge

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Definition

Vaginal discharge may be a subjective complaint or an objective finding. Patients may complain of excessive secretions, abnormally colored or textured secretions, or malodorous secretions. In the absence of a complaint, the examiner may note abnormal secretions (asymptomatic to the patient). The term *vaginal discharge* is often used by patients to refer to any genital discomfort. The complaint must be verified by physical and laboratory examination to differentiate abnormal from physiologic discharge and to determine diagnosis and treatment.

Technique

Eliciting the cause of a vaginal discharge requires a good gynecologic history with particular attention to the following details.

The woman's age, last menstrual period, regularity, and timing of cycles should be obtained. Her hormone status (pre- or postmenopausal) must be known. Ask if a birth control method is necessary, and if so, what is used. Yeast infections often occur just before menses, trichomonas just after. Gonorrhea ascends to the upper tract postmenses. Postmenopausal women are less likely to have yeast and more likely to have noninfectious causes. Pregnancy and birth control pills predispose to yeast infections.

Ask if the discharge is acute, chronic, or frequently recurrent. Discharges that patients claim "never go away" are likely to be bacterial vaginosis, if pathologic, or simply physiologic discharges.

Ask specifically about pruritus, internal dysuria (felt inside the body), external dysuria (felt on the labia), dyspareunia, irritation, and offensive odor. Internal dysuria suggests urinary infection, gonorrhea, or chlamydia. External dysuria suggests vulvovaginal irritation with secondary burn from urine. Candida is intensely pruritic, trichomonas less so, and bacterial vaginosis rarely. Trichomonas and bacterial vaginosis can both cause dysuria, usually external. Bacterial vaginosis has a fishy odor; trichomonas, a foul one. The intense inflammatory reaction of yeast or trichomonas can cause dyspareunia. Herpes can cause intense external dysuria and pruritus.

Attempt to characterize the discharge by color and consistency. Color may be white, gray, yellow, or brown (if mixed with blood). Consistency may be mucoid (thin), thick, frothy, or cheesy. Yeast is often like cottage cheese. Bacterial vaginosis is often grayish white and nonhomogeneous. Color and consistency alone cannot make a diagnosis, however.

The presence of fever or abdominal pain must be sought. If present, think of gonorrhea, chlamydia, and upper genital tract infection, or of urinary tract infection. Primary herpes can also cause fever and malaise. Vaginitis should not have systemic symptoms.

As with all sexually transmitted diseases, it is important to know the sex of the patient's sexual partner(s), the number of partners, any recent change in partners, and whether the partner(s) have symptoms. Vulvovaginal candidiasis, trichomonas, bacterial vaginosis, and herpes can all be transmitted between lesbian partners; gonorrhea, very rarely. The prevalence of various sexually transmitted diseases varies depending on the population studied (emergency room, office-based practice, sexually transmitted disease clinic).

Elicit a history of douching, home remedies, over-the-counter remedies, or leftover treatments from past infections. Hygiene practices, such as frequent douching with commercial douches or scrubbing the genitals, can cause irritant dermatitis that may be the primary or secondary cause of the presenting problem. Recent medication use may alter the physical and laboratory examination.

Many patients believe all vaginitis to be "yeast" infections and use the term generically. Despite adequate treatment, bacterial vaginosis and yeast are often recurrent in some women, who will eloquently tell you, "This is exactly what I had before."

A good history of underlying medical conditions, particularly those that predispose to candidiasis, is important. Recent antibiotic usage for other conditions (such as penicillin prescribed by a dentist) should be sought.

A comprehensive pelvic examination is necessary for the accurate diagnosis of vaginal discharge (see Chapter 177). Particular attention should be directed to looking for herpetic vesicles and contact dermatitis on the external genitalia. The vaginal walls should be checked for erythema and coating with discharge. Look for mucopus in the endocervix by cleaning the ectocervix with a swab, inserting a small sterile swab in the endocervix, and noting the presence of yellow pus on the swab. A bimanual examination should be done. Appropriate laboratory specimens should be obtained (see Chapter 179).

In the diagnosis and treatment of vaginal discharge, the history correlates poorly with objective clinical findings. Effective diagnosis must include physical examination and office laboratory procedures.

Basic Science

The clinician must determine if the woman has a physiologic discharge, a vulvovaginal infection, cervicitis, or upper genital tract infection.

Normal genital secretions are a mixture of transudate through mucous membranes, secretions from glandular structures, and desquamated vaginal epithelial cells. Both the amount and consistency of cervical secretions and the desquamation of epithelial cells are hormone dependent and may increase during ovulation, premenstrually, with pregnancy, or with the use of oral contraceptives. Normal discharge is asymptomatic except for occasional complaints

of excessive secretions. A physiologic discharge is usually clear to white, nonadherent to the vaginal wall, and pooled in the posterior fornix. It can appear nonhomogenous with clumps of desquamated epithelial cells. It has a pH of less than 4.5, no offensive odor, and an abundance of epithelial cells on saline microscopy. (Women with copious amounts of desquamated cells who are otherwise asymptomatic are often those who present frequently with "recurrent vaginal discharge.")

The major causes of abnormal vaginal discharge are either vaginal or cervical infections. Causes of vaginal infections are *Gardnerella vaginalis, Trichomonas vaginalis,* and *Candida albicans.* Primary cervical infections causing vaginal discharge are *Neisseria gonorrhoeae, Chlamydia trachomatis,* and *Herpes simplex.* In the prepubertal girl, *N. gonorrhoeae* causes a vaginal rather than cervical infection.

Noninfectious causes of vaginal discharge include atrophic vaginitis, foreign body, malignancy, contact dermatitis, or other mechanical or chemical irritation. An intrauterine contraceptive device can sometimes cause vaginal discharge related to chronic irritant cervicitis or endometritis.

Bacterial vaginosis will be the diagnosis in 40 to 50% of women presenting to office practices with vaginitis. It was formerly called haemophilus vaginitis and is often called by its unfortunate misnomer, nonspecific vaginitis. Most recently it has been called Gardnerella, after its associated organism.

Gardnerella is a short, gram-negative to variable bacillus that may be a colonizer in the vagina. It is controversial whether Gardnerella itself produces the signs and symptoms of the disease or whether its symbiotic relationship with vaginal anaerobes is necessary to produce the characteristic gray, homogeneous, malodorous discharge. The disease is limited to sexually active women, but clear evidence for sexual transmission is lacking, and the need for treatment of partners is unclear. Diagnosis is made by laboratory methods. (See Chapter 179 for criteria.)

Candida vaginitis, or "yeast," occurs less frequently than patients or physicians believe. In one group of self-referred women who offered to be part of a study on chronic recurrent yeast infections, only 50% were found to have candida vaginitis. When it occurs, the offending pathogen is usually *Candida albicans.* Again, it is controversial whether this is a normal colonizer of the vagina. Its pathogenicity is not related to its concentration in the vagina; small amounts can cause excruciating symptoms. Normal bacterial colonization has been thought to be important in the defense against *Candida* infection; for example, some lactobacilli inhibit the growth of candida. However, women with *Candida* still have predominant lactobacilli on gram stain of vaginal fluid. This belief in the efficacy of lactobacilli has led to the home remedy of yogurt containing lactobacillus, used intravaginally with an applicator or as a douche, for treatment of vaginitis. Sexual transmission has not been proven to be important in most cases, although treating male partners may help in recalcitrant cases. Host factors (e.g., recent antibiotic treatment, pregnancy, oral contraceptives) all predispose to yeast infection. It is not known why pregnancy and use of oral contraceptive pills predispose to yeast infection. Diabetes mellitus out of control facilitates yeast growth in the vagina, but most women with recurrent yeast do not have diabetes. Women with diabetes are at risk for all forms of sexually transmitted diseases and must be examined and treated appropriately. Some women seem to be particularly predisposed to recurrent candida vaginitis without apparent reason, causing them considerable morbidity and expense. Whether this is due to gastrointestinal tract colonization, deep vaginal wall penetration of the candida, or other factors is not known and leaves a frustrating problem for patient and clinician.

Candida vaginitis has the most characteristic history of the vaginitides, with pruritus being the most prominent symptom, often with sparse or no discharge. The discharge, when present, may resemble cottage cheese. Erythema and swelling of the vulva and vaginal walls are marked. Diagnosis is suggested by history and confirmed by physical examination and potassium hydroxide preparation or culture.

Trichomonas vaginalis is a flagellated protozoan that grows well at a pH of 6. Its role as a sexually transmitted organism has been well established. However, it is a common organism often found asymptomatically in sexually inactive postmenopausal women. It can be associated with other sexually transmitted diseases, especially gonorrhea. Trichomonas infects squamous, but not columnar, epithelium. The urethra and Skene's glands are often involved, explaining the need for systemic rather than local therapy. The ectocervix may be involved, with punctate hemorrhages producing the typical strawberry cervix, but this is seen only 2 to 5% of the time. Discharge may be gray or greenish yellow and is not usually frothy, but is usually excessive. Trichomonas induces a polymorphonuclear leukocyte response easily seen in wet-mount preparations. Diagnosis is made by wet mount.

Occasionally wet-mount examination of vaginal discharge yields only white blood cells with no evidence of trichomonas or of mucopus from the cervix. These women are usually at low risk for sexually transmitted diseases. Cervical ectopy with inflammation, rather than infection, may be the cause. The cause of this condition is not known, but all usual sources of vaginitis should be looked for. Because of misuse of the term nonspecific vaginitis, it is probably best to call this simply "inflammatory vaginitis."

Over-the-counter douches, scented toilet paper, and contraceptive products are some of the more common etiologies for local irritation and contact dermatitis. Forgotten diaphragms and tampons must be looked for with malodorous discharges. Postmenopausal women with atrophic vaginal mucosa may develop a watery, irritating, sometimes malodorous discharge secondary to local irritation, especially from intercourse. This may be mixed with blood, and can be mistaken for postmenopausal bleeding.

Cervicitis has been a poorly defined term used to refer to a variety of conditions including a pathologic diagnosis, cervical ectopy, and true cervical infection. It is to be hoped that the expanded interest in sexually transmitted diseases will lead to more precise criteria for its use. At present, the most important infectious cervical pathogens that can produce vaginal discharge include *N. gonorrhoeae, C. trachomatis,* and herpes simplex. Objective criteria have been developed for the diagnosis of mucopurulent cervicitis (see Chapter 179). Most women with mucopurulent cervicitis will have gonorrhea, chlamydia, or both. Both are pathogens of the cervix and upper female genital tract as well as the urethra, and require systemic treatment.

Clinical Significance

While vaginal discharge is occasionally the presenting symptom of a serious systemic illness such as diabetes mellitus or endometrial cancer, its major significance lies in the discomfort and suffering of the women who have it. Vaginal discharge is one of the twenty-five most common reasons

for visits to primary care offices, and represents an even greater proportion of visits to gynecologic offices and sexually transmitted disease clinics. It has a morbidity that includes pain, time lost from work, sexual unhappiness, family disruption, sexual transmission of disease, systemic illness, and infertility.

Vaginal discharge is the common symptom of a variety of diseases each of which has a distinct treatment. Incorrect diagnosis has medical and social consequences. If not correctly identified, normal women with physiologic discharge may present frequently for treatment of their "vaginitis." Sexually transmitted infections will recur if partners are not treated appropriately and patients are not counseled appropriately. Upper genital tract spread can occur with *C. trachomatis* and *N. gonorrhoeae,* leading to systemic illness, hospitalization, and chronic disease. Iatrogenic vulvovaginal candidiasis, seen especially in young women who have had antibiotics prescribed for other reasons, is a common problem that can be avoided with appropriate forethought and prescription. Unrecognized herpes simplex, vulvovaginal candidiasis, or gonococcal infection at the time of delivery can cause illness in the neonate. Repeated doctor visits, and increased health care costs, result from incorrect diagnoses treated by telephone or without laboratory examinations.

The incidence of sexually transmitted disease is on the increase. One hopes that new physician interest and research in the problem of vaginitis will lead to better diagnosis and treatment.

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